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ornamental purposes, but for the real illustration of the text. The book is well printed and bound and with no undue share of typographical errors.

While the different topics discussed in this work have been treated in more or less detail in official reports and in special articles, Dr. Ries's book will be welcomed by all interested in the subject of clays, as being certainly the most comprehensive and evenly balanced, if not the only, presentation of the subject as a whole that we have. And though written primarily for American geologists, chemists, and engineers, the introductory part, being of a general nature, should be equally useful to men of all nationalities.

EUGENE A. SMITH

UNIVERSITY OF ALABAMA

Biochemie der Pflanzen. Bd. II. By FRIEDRICH CZAPEK, Ph.D., M.D. Gustav Fischer in Jena. 1905. Pp. xii + 1027.

The second volume of this important work on the chemistry of plants has fully sustained the high expectations excited by the first volume. In something over a thousand pages, the author brings his account down to the state of our knowledge as it existed in June, 1905. It is impossible in the space available for this purpose to give more than a most meager outline of the contents of this volume of this truly great work. A general discussion of the biochemistry of plant albuminoids is followed by a treatment in some detail of the phenomena connected with this class of bodies as seen in the physiological processes of various groups of plants from bacteria to phanerogams, and as seen in the various organs and structures of these plants.

The second large division deals with the nitrogen-containing end products of plant metabolism. The discussion is one of rare interest, especially as dealing with the chemical physiology of hydrocyanic acid and with the plant alkaloids. We have had chemical discussions and botanical discussions on these subjects, but the author has here succeeded in making the facts of either category illuminate those of the other, an observation that applies

to a remarkable degree to all parts of the book.

The chapters on the physiology and chemistry of the relation of plants and plant products to oxygen is succeeded by a treatment of the part played by ash constituents in plant metabolism in its widest relations. A chapter of unusual interest on the chemical aspects of plant irritability concludes the body of the work.

It would be hard to speak in too high praise of this work. It comes into a place in botanical literature that has never been filled heretofore, and as the drift of plant study in recent years has been strongly in this direction, the need of such a work has been more and more keenly felt. This book will go on to the same shelf of indispensables on which Pfeffer's 'Physiology,' Goebel's 'Organography' and Haberlandt's 'Anatomy' are to be found.

It is to be strongly hoped that the author may find opportunity from time to time to revise the work as the progress of science makes necessary, and thus provide investigators with a ready means of keeping in close touch with the progress of physiology. The author gives evidence of a desire to do this by providing in an appendix references to literature appearing after the body of the work was completed.

This book should be translated into English, and that at an early date.

R. H. TRUE

SCIENTIFIC JOURNALS AND ARTICLES

The American Naturalist for May opens with an article by Herbert W. Rand on 'The Functions of the Spiracle of the Skate,' the conclusion being that it serves chiefly as an in-take for the respiratory stream, and that the reversal of the stream, or spouting, may serve to clear out the gill chambers and be analogous to taking a deep breath. F. H. Pike presents 'A Critical and Statistical Study of the Determination of Sex, Particularly in Human Offspring.' Among the conclusions are that in man there is a slight excess in the number of male offspring; that sex determination probably occurs before the fertilization of the ovum and that sex is

hereditary. Alfred W. G. Wilson gives some interesting accounts of 'Chubs Nests,' probably made by *Semotilus corporalis*. These 'nests' are small mounds of pebbles and sometimes reach a diameter of five or six feet and a height of 14 to 24 inches. In correspondence Dr. Jordan alludes to the flying-fish problem, stating his opinion that the fins are *not* moved. But when a flying-fish is laid on a vessel's deck the fins are flapped vigorously, and why not in the air?

The Museums Journal of Great Britain for April notes that the eighteenth meeting will be held in Dundee. F. A. Bather discusses 'Interchangeability in Cases,' with special reference to those in the geological department of the British Museum. It is soothing to find that Dr. Bather has met the ever-occurring irritating facts that the cabinet-maker shows a diabolical ingenuity in frustrating the work of the designer, and that no carpenter with any proper pride will make a drawer or a shelf that will run freely. The interchangeability of large cases is rather a difficult matter, but was to a great extent applied by Dr. Goode in the U. S. National Museum. Dr. O. Lehmann describes some interesting features in 'The Altona Museum Exhibit at Dresden, 1906,' wherein he so arranged the specimens as to give the visitor the idea that nature works in much the same manner as the artist and that the form is the shortest artistic expression of the whole life of the animal. From this and previous articles it is evident that Dr. Lehmann has expended much thought in making his museum attractive and instructive to the ordinary visitor.

SOCIETIES AND ACADEMIES

THE NEW YORK ACADEMY OF SCIENCES—SECTION OF ASTRONOMY, PHYSICS AND CHEMISTRY

A JOINT meeting with the Physics Club of New York City was held at the American Museum of Natural History on Friday evening, March 22. The following demonstrations were given:

F. J. ARNOLD: Finding the weight of an irregular body by means of its center of

gravity. An irregular body consisting of a 50 cm. wooden rod with a bar of metal attached at one end to give the combination a low center of gravity. Location of center of gravity, fulcrum and known force marked on paper strip fastened to bar and lever arms measured directly by means of these points.

R. H. CORNISH: (1) Method of projection on screen of lines of force surrounding a conductor carrying a current. (2) Mechanical illustration of beats in sound.

J. STEWART GIBSON: New piece of apparatus for showing the relation between intensity of illumination and distance.

W. R. PYLE: (a) Dip-needle demonstration. (b) Magnetizer for magnets.

E. R. VON NARDROFF: An apparatus for determining the moment of inertia in gm.-cm.² units.

CHAS. FORBES: (a) The osmosescope. (b) The centrifugal railway.

W. M. Campbell read a paper on the effect of pressure on magnetization of iron. The paper referred briefly to the Kirchoff theory on the effects of stress deduced from the strains due to magnetization, to the experimental work done by Wassmuth, Tomlinson, Nagaoka and Honda and Miss Frisbie, and the contradictory results they obtained. Then followed a description of the apparatus used by the writer, the method of conducting the experiment and the results. Higher pressures were used in magnetizing fields stronger than those used by other investigators. Keeping the pressure constant and changing the field, the results showed an increase in intensity up to about eighteen units of field, then a decrease with a change of sign at about H = 90 units, and a continual decrease with increase of field.

J. Stewart Gibson read a paper on the results of a series of experiments on the critical angle; its effect on vision from underneath the surface of water.

At a meeting of the section held on Monday evening, May 20, F. M. Pedersen read a paper on the influence of molecular structure upon the internal friction of the vapors of certain isomeric ethers. The viscosity coefficients of